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| APPLICATION NO.                                                                                     | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/542,228                                                                                          | 11/02/2005  | Heinz-Peter Rink     | PAT-01096           | 3088             |
| 26922                                                                                               | 7590        | 05/06/2008           | EXAMINER            |                  |
| BASF CORPORATION<br>Patent Department<br>1609 BIDDLE AVENUE<br>MAIN BUILDING<br>WYANDOTTE, MI 48192 |             |                      | MESH, GENNADIY      |                  |
|                                                                                                     |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                                     |             |                      | 1796                |                  |
|                                                                                                     |             |                      | NOTIFICATION DATE   | DELIVERY MODE    |
|                                                                                                     |             |                      | 05/06/2008          | ELECTRONIC       |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/542,228 | <b>Applicant(s)</b><br>RINK ET AL. |  |
|                              | <b>Examiner</b><br>GENNADIY MESH     | <b>Art Unit</b><br>1796            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) 1-16, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/15/2005</u> .                                              | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of Claims 17 and 18 ( Group III) in the reply filed on 04/28/2008 is acknowledged. The traversal is on the ground(s) that searching all four Groups ( I,II,III and IV) will not place a serious burden on the Examiner. This is not found persuasive because, basis for Election /Restriction in this case, as it was stated in Office action mailed on March 28, 2008, is irrelevant to imposing burden on Office, but was based on **Lack of Unity** :

The inventions listed as Groups I, II, III and IV do not relate to a single general inventive concept under **PCT Rule 13.1** because, under **PCT Rule 13.2**, they lack the **same or corresponding special technical features** .

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weikard et al.( US 6,150,458) in view of Kobayashi et al." Enzymatic Polymerization".

Regarding Claims 17 and 18 Weikard discloses process for preparation of (meth)acrylic acid ester by reacting hydroxyl group containing polyester with (meth)acrylic acid in the presence of esterification catalyst ( see abstract) and pointing

out that polymers obtained by the process can be used as radiation curable binders ( see column 4, lines 11-14).

Weikard is silent regarding conducting this process with specific catalyst as enzyme.

However, Kobayashi teaches that process of polymer modification, wherein terminal hydroxyl group of polyester can react with carboxylic acid could be catalyzed by lipase ( enzyme) catalyst in order to give end-functionalized polyester - (see page 3813, paragraph 4 Polymer Modification) and pointing out that enzymatic polymerization can be conducted under mild conditions without using toxic reagents by natural catalyst with "green" appeal in commercial benefit and ecological requirement - see page 3793, right column third paragraph.

Therefore, it would be obvious to one of ordinary skill use lipase( enzyme) catalyst per teaching of Kobayashi in order to obtain modified polyester by process of Weikard "under mild conditions without using toxic reagents by natural catalyst with "green" appeal in commercial benefit and ecological requirement".

Regarding limitation of Claim 18: Kobayashi teaches ( see page 3811, paragraph 2- Polymerization of Diacid and Glycols), that :

"biotransformation of various combinations of dicarboxylic acid derivatives and glycols to bio-degradable polyesters have been reported. Dicarboxylic acids as well as its derivatives, activated and nonactivated esters, cyclic acid anhydride, and poly-anhydrides, were found to be employed as useful monomers for the enzymatic synthesis of polyesters under mild reaction conditions. Many dicarboxylic acids and

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their alkyl esters are commercially available; however, they often showed **low reactivity toward lipase catalyst**. Thus, development of the reaction apparatus and **reaction conditions** has been made for efficient production of higher molecular weight polyesters. ... a horizontal two chamber reactor was employed to remove the **leaving water molecules with molecular sieves.**"

Therefore, it would be obvious to remove water from reaction mixture as it claimed in Claim 18.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GENNADIY MESH whose telephone number is (571)272-2901. The examiner can normally be reached on 10 a.m - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272 1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gennadiy Mesh  
Examiner  
Art Unit 1796

/GM/

/James J. Seidleck/  
Supervisory Patent Examiner, Art Unit 1796